



# Wooden Furniture Manufacturing

## *A Success Story in Waste Reduction*

### Norse Furniture Corporation

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Lyle Morse, owner of Norse Furniture Corp. in Olympia, applies pollution prevention strategies on a broader basis than most companies. Going beyond its own manufacturing processes, the company takes steps to address the long-term environmental impact of its products. From design to manufacture, and throughout the life of the furniture, Norse Furniture products pollute less and waste fewer resources.

Norse Furniture designs durable furniture for institutions like colleges and military facilities. The company builds its furniture to last 15 to 20 years. Most pieces use modular components which can easily be replaced or repaired. State-of-the-art computer applications get the maximum use out of raw materials, such as wood and fabric. Computerized, numerically controlled machining equipment, like the Morbidelli boring machine, reduces rework and improves quality control.

Improved manufacturing methods significantly lower the amount of solid waste generated by the company. Wood, fabric, and foam waste is reused in-house. The wood that is not reused goes to an off-site recycler. The company now uses launderable cloth rags to apply stain instead of disposable paper wipers. These design and manufacturing improvements reduce Norse Furniture's refuse from 32 to 20 yards a month.

Lyle Morse has found ways to reduce the toxicity of materials he uses, too. By using plycore, a seven-ply veneered plywood, instead of particle or chip board, the furniture gives off less formaldehyde and other volatile compounds. Dry-joint construction techniques eliminate the need for adhesives during assembly. The reduced off-

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gassing acts as a marketing asset due to growing customer concern about indoor air quality. Norse Furniture’s move away from toxic materials and processes provides customers with a “green” alternative.

Converting to water-borne, rather than solvent-based, stains and lacquers lowers the company’s emissions of volatile organic compounds. Norse Furniture reduced its release of these compounds by roughly 35% between 1992 and 1994. Some of these coatings cover nearly twice the surface area of solvent-based coatings which offsets their higher cost.

Company employees support the switch to a different coating system although it requires operational changes. Norse Furniture is a union shop and employs 30 to 70 workers. “The old KV lacquer had a terrible odor,” says employee Wally Rohr. “The new water-based coatings clean up the atmosphere in the shop.” Lyle Morse also finds that workers experience less eye irritation. The change benefits the surrounding neighborhood, which includes a densely populated residential area, a nearby school and a fitness gym. “It’s the company’s policy to do all we can to be a good neighbor,” says Morse. “We are happy to find a way to reduce our emissions.”

For Lyle Morse, pollution prevention increases profits, improves worker and community health and safety, saves on raw materials and waste disposal costs and enhances marketing. Norse Furniture Corporation proves that increased production does not have to increase pollution.

*This document is published by the Washington State Department of Ecology's Hazardous Waste and Toxics Reduction Program. This Success Story highlights the achievement of a Washington business that has found pollution prevention planning the next step toward waste reduction and management.*

*Businesses across the state have discovered significant benefits from waste reduction, including:*

- cost savings on waste disposal, raw materials, and operating*
- reduced regulatory burden*
- coordinated management of various environmental requirements*
- increased production efficiency*
- improved competitiveness*
- improved worker safety.*

*It is our hope that the information contained in this Success Story will help other businesses identify ways to reduce their impact on the environment.*

